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IT Evolution: Today and Tomorrow

Insights from the VMware 2013 Journey to IT as a Service Survey

AUGUST 2013



As virtualization has evolved and matured, some companies are benefiting more than others. Why? The answer goes beyond the technology—although technology is a vital catalyst—to the way that their CIOs leverage virtualization and other innovative technologies to transform the IT organization. These CIOs have combined technology and a new way of operating to become more service oriented and more focused on delivering business value.



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The IT Journey Continues

Executive Summary

Since its inception, the virtualization marketplace has evolved rapidly, and that evolution shows no sign of slowing down—in fact, it is accelerating. CIOs and other IT decision makers must understand the landscape clearly to take full advantage of emerging opportunities across the IT infrastructure. Those who make the right choices can maximize the value of their budgets, generate revenue streams based on new and innovative IT services and applications, leverage their staffs efficiently and effectively, and create a place for IT at the executive table. Otherwise, it's business as usual—and that's no recipe for success.

IT organizations are on a journey that starts with the IT production phase, moves to business production, and finally reaches the goal of delivering IT as a service (ITaaS) (Figure 1). Each phase of the Journey offers substantial benefits in efficiency, agility, and control. Companies that reach the final phase of the Journey—we will call them ITaaS companies—realize the greatest benefits, a reality that is not lost on CIOs and their executive teams. That's why more than three-quarters of companies are pursuing a strategy of extending virtualization beyond the computing platform—where it has achieved remarkable success—to the rest of the infrastructure, including storage, networking, and security. This level of pervasive virtualization is a prerequisite for achieving the full value of ITaaS.

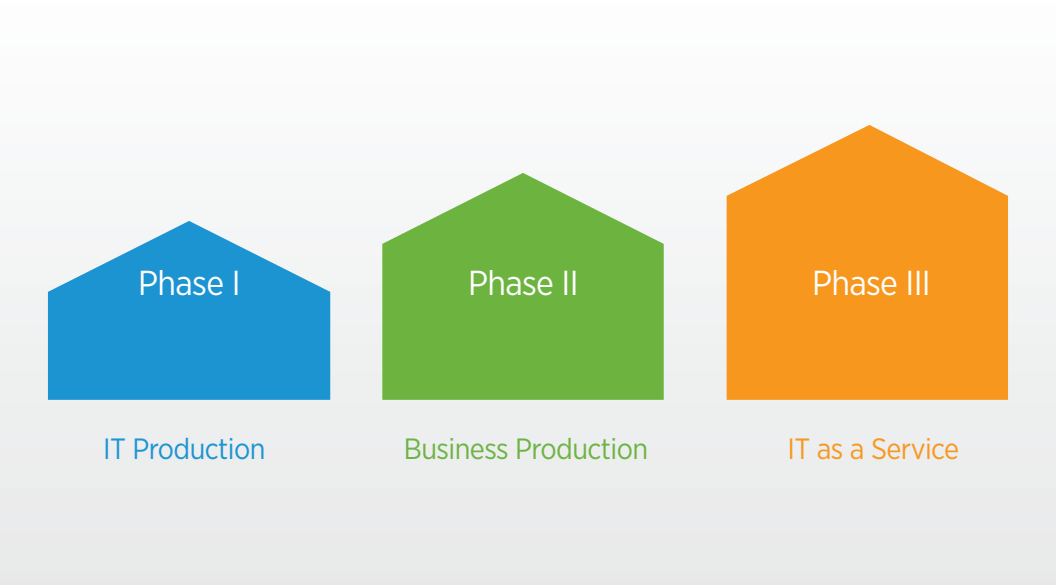


Figure 1. The IT Journey

Each year, VMware surveys 1,000 CIOs and other IT decision makers to understand how customers are leveraging virtualization and cloud computing to advance IT and business goals. The 2013 findings were striking.[1]

[1] All numerical data cited in this report is derived from the VMware 2013 Journey to IT as a Service Survey unless otherrwise indicated.

ITaaS companies run their operations in ways that differ fundamentally from their peers:

- **ITaaS companies leverage highly virtualized infrastructure environments and innovative forms of automation and management to introduce new forms of IT service delivery.** These include self-service and on-demand models for IT that significantly increase IT agility and provide a model for IT that focuses on innovation and business value creation. As a result, their IT organizations generate greater incremental revenues, respond faster to the needs of the business, reduce developer and operations costs, and garner more of the enterprise budget than their less-mature peers (Figure 2).

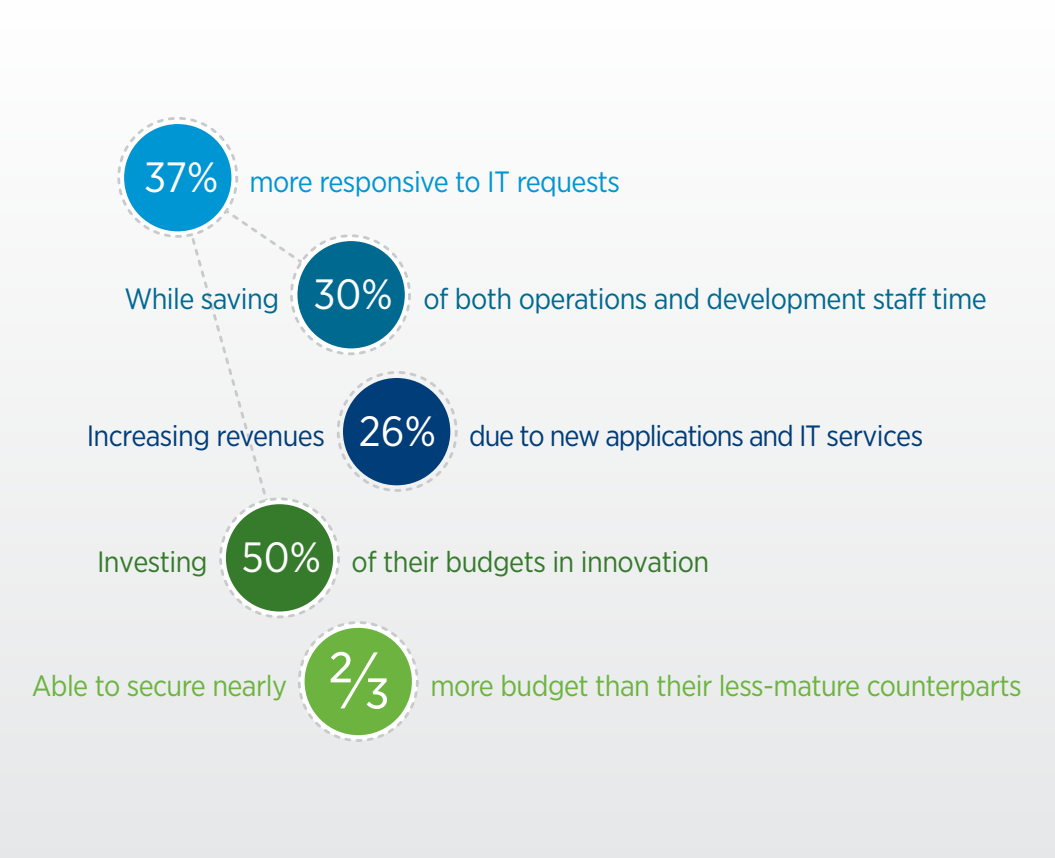


Figure 2. Benefits for ITaaS Companies

- **ITaaS companies realize greater value for their investments in virtualization.** In 2013, these organizations recognized an average ROI of 229 percent for their investments in virtualization, compared to 181 percent for companies in the initial phase of the Journey (Figure 3).

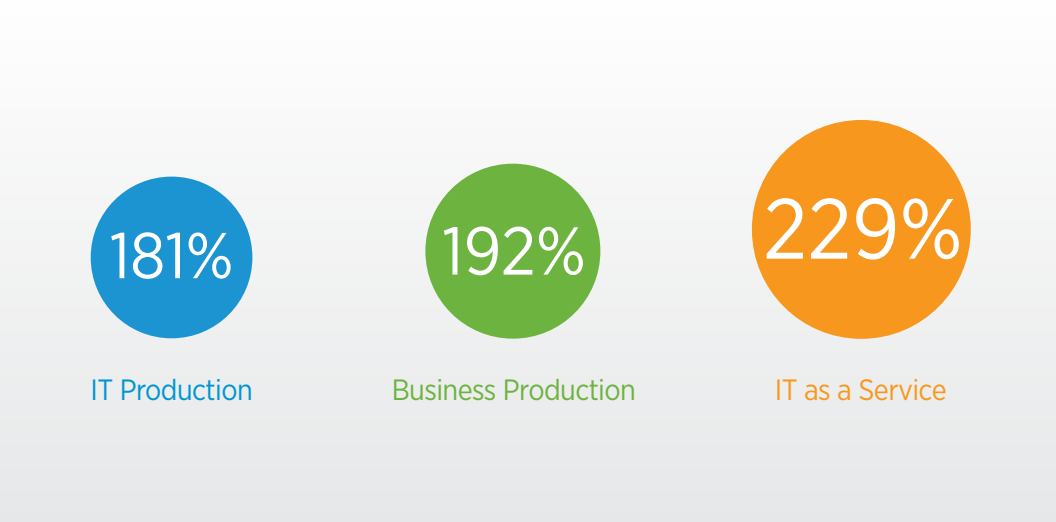


Figure 3. ROI by Journey Phase, 2013

• **ITaaS companies reinvest more of their virtualization savings in innovation.** A recent Gartner report2 shows that 70 percent of IT budgets are consumed by "run the business" costs, with just 30 percent available for new applications and services. As a whole, VMware customers are ahead of this industry average, committting only 58 percent of their budgets to existing operations with 42 percent reserved for new investments. VMware customers have a goal of rebalancing their budgets to recommit an average of 50 percent of their budgets to innovation. The most striking results are reported by ITaaS companies: One-third have achieved their goal of a 50-50 budget allocation (Figure 4).

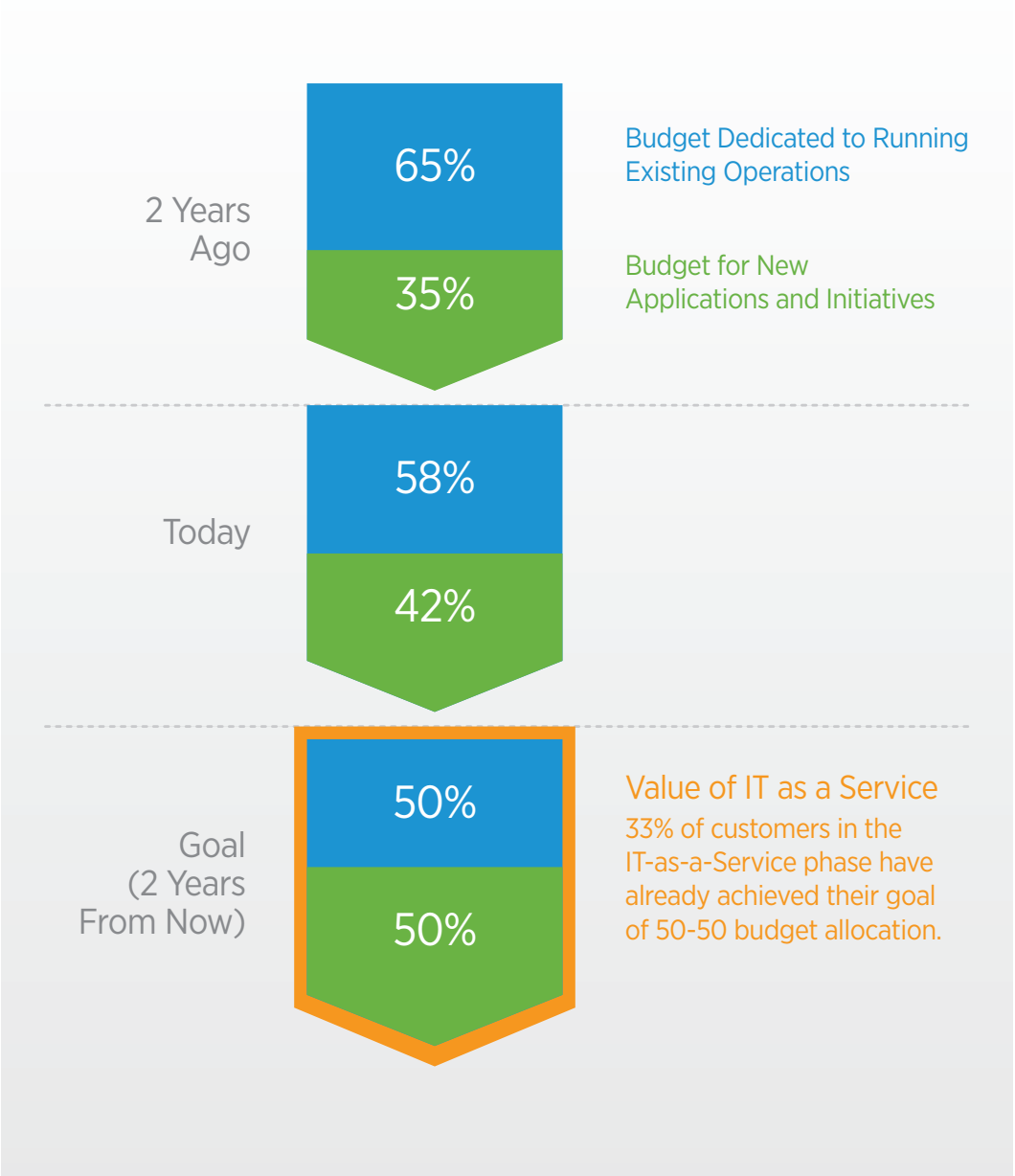


Figure 4. Budget Allocation, Existing Operations Versus Strategic Investment

[2] Mark P. McDonald, "Maximize IT Returns by Amplifying Performance Rather Than Administering a Budget," Gartner Blog Network, January 9, 2012, http://blogs.gartner.com/mark_mcdonald/2012/01/09/maximize-it-returns-by-amplifying-performance-rather-than-administering-a-budget/.

- **ITaaS companies receive larger budget allocations than less-mature companies.** IT-as-a-service organizations have successfully transformed IT to become strategic assets for their businesses. As a result, their IT budgets have increased accordingly, with these CIOs able to secure significantly more budget as a percent of revenue. The difference between budget allocations as a function of revenue between IT production companies and ITaaS companies can be as much as 60 percent. (Figure 5).

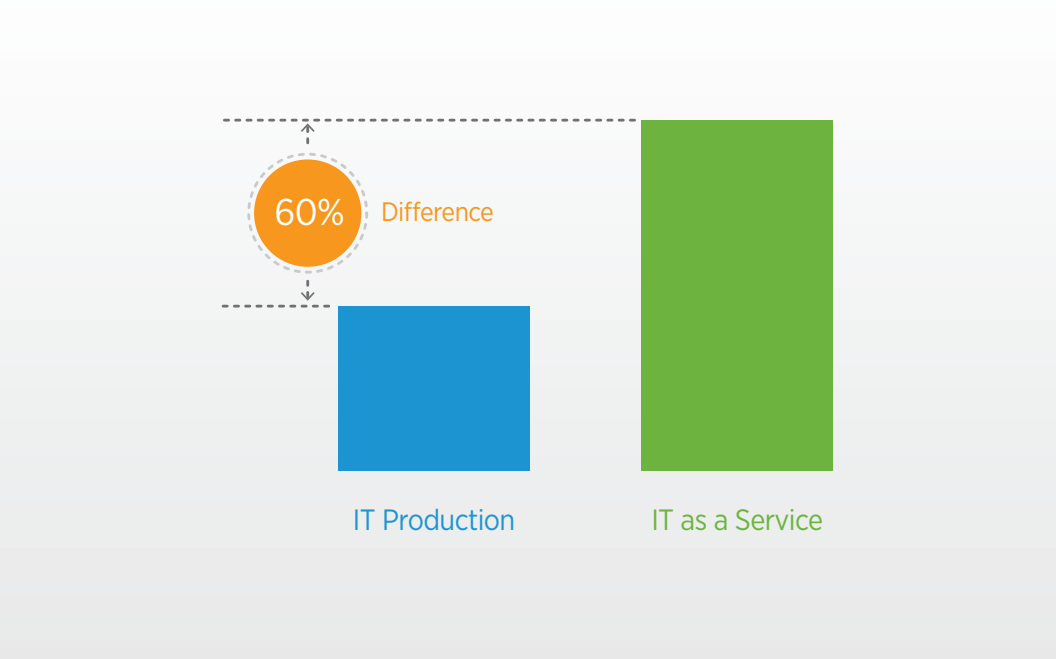


Figure 5. Comparison of IT Budgets in 2013

IT in the Spotlight

All too often, corporate executives regard the corporate IT budget as an expense: The less you spend, the better the bottom line. To users, IT appears to be the support technician—the wizard who fixes problems, sets up new hardware, loads software, manages backups, and essentially "keeps the lights on," so the rest of the workforce can do the real work of running the business. IT is regarded as a tactical resource—and little more.

The most successful enterprises today take a different tack. They view IT as a strategic asset that is essential for achieving the company's business goals. These innovators treat the IT budget as an investment: Minimizing cost gives way to maximizing ROI. They continue to increase the percentage of revenues allocated for IT initiatives year over year—and they are reaping substantial benefits.

When the IT mindset shifts from tactical to strategic, the way IT functions in the enterprise changes. IT managers work closely with line-of-business managers to deliver new applications faster, create revenue opportunities, and drive competitive differentiation. Business users continue to have reliable, secure access to legacy services while boosting productivity with innovative new services.

What has caused this shift? Although there are several factors, a key enabler is virtualization. In little over a decade, virtualization has progressed from an opportunistic tool used for a few specialized applications to a pervasive technology that supports the full range of IT services—even business-critical applications such as ERP, CRM, collaboration, and database applications that generate revenue and create a competitive advantage. Even more, virtualization has opened a new model for IT that is making IT more agile and aligned to business strategy.

Virtualization Drives IT Success

As virtualization has evolved and matured, some companies are benefiting more than others. Why? The answer goes beyond the technology—although technology is a vital catalyst—to the way that their CIOs leverage virtualization and other innovative technologies to transform the IT organization. These CIOs have combined technology and a new way of operating to become more service oriented and more focused on delivering business value. These ITaaS companies consistently realize superior levels of business value in areas such as total IT cost, hardware maintenance, application downtime, and time to market for new applications.

Increasingly, the investments that drive ITaaS are being funded by the very efficiencies that result from pervasive virtualization. A growing number of CIOs have achieved an ambitious milestone: They are investing at least half of their budgets in innovation through new applications and services. Seeing the value of IT in a new light, executives in these enterprises respond by boosting budgets—as much as 60 percent, compared to their less-virtualized peers.

Furthermore, virtualization technology continues to evolve, with increased levels of automation and comprehensive frameworks for managing the virtualized environment more efficiently. It's no wonder that the vast majority of companies have set their sights on implementing ITaaS, the stage in the Journey that features the highest level of business benefits and maximum ROI.

IT Evolution as a Journey

In navigating today's challenging IT landscape, it's helpful to view IT evolution as a Journey. Most companies can readily identify their current location along the capabilities axis. The Journey consists of three stages in which the focus of data-center operations progresses from IT productivity to business productivity to the ultimate goal of ITaaS (Figure 6). Each stage in the Journey has clear patterns concerning how businesses work with, understand, and benefit from the technology. As the stages progress, IT leaders come to appreciate virtualization and cloud as value enablers and not just as technologies. Although every situation is unique, the vast majority of IT leaders can locate themselves within one of three primary stages of adoption.

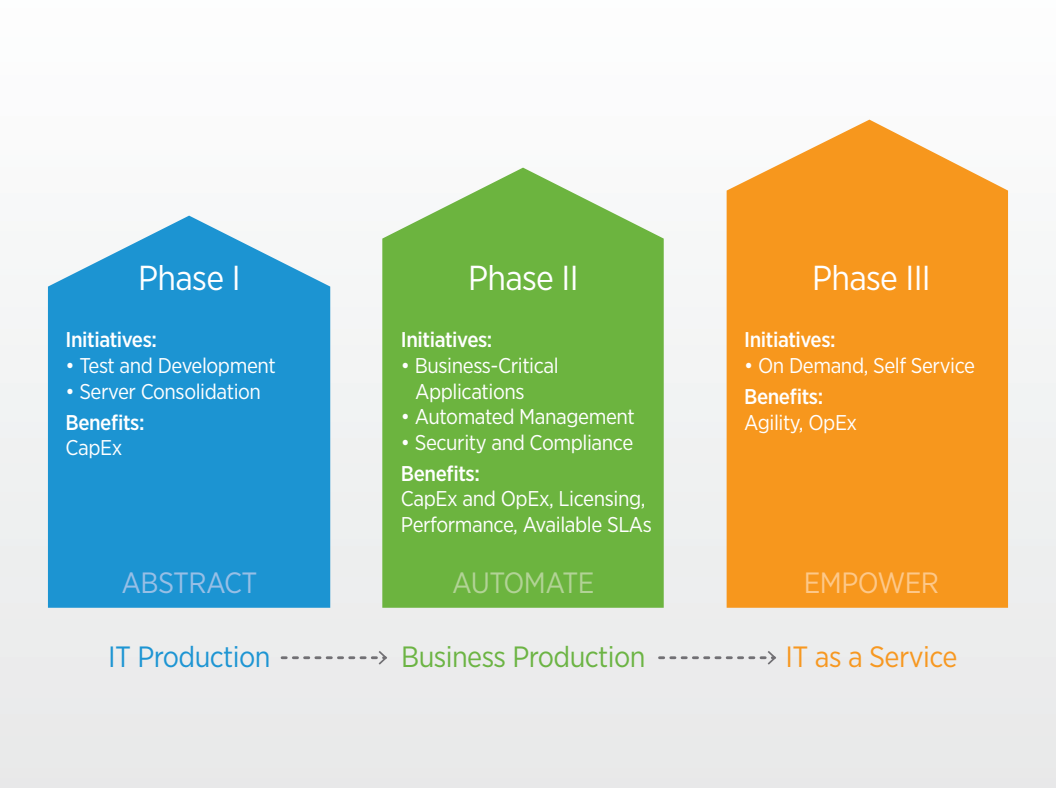


Figure 6. The IT Journey

Software-Defined Data Center

Underpinning the entire IT Journey is the software-defined data center (Figure 7). In the software-defined data center, compute, storage, networking, and security resources are implemented in software that can be pooled for efficient allocation and managed centrally in an integrated way. Once an aspiration, the prospect of a fully virtualized data center is becoming a reality, as the industry explores ways to abstract essential functionality into software running on industry-standard x86 hardware. In fact, 77 percent of customers surveyed have a srategy today to expand virtualization across the data center to networking and storage.

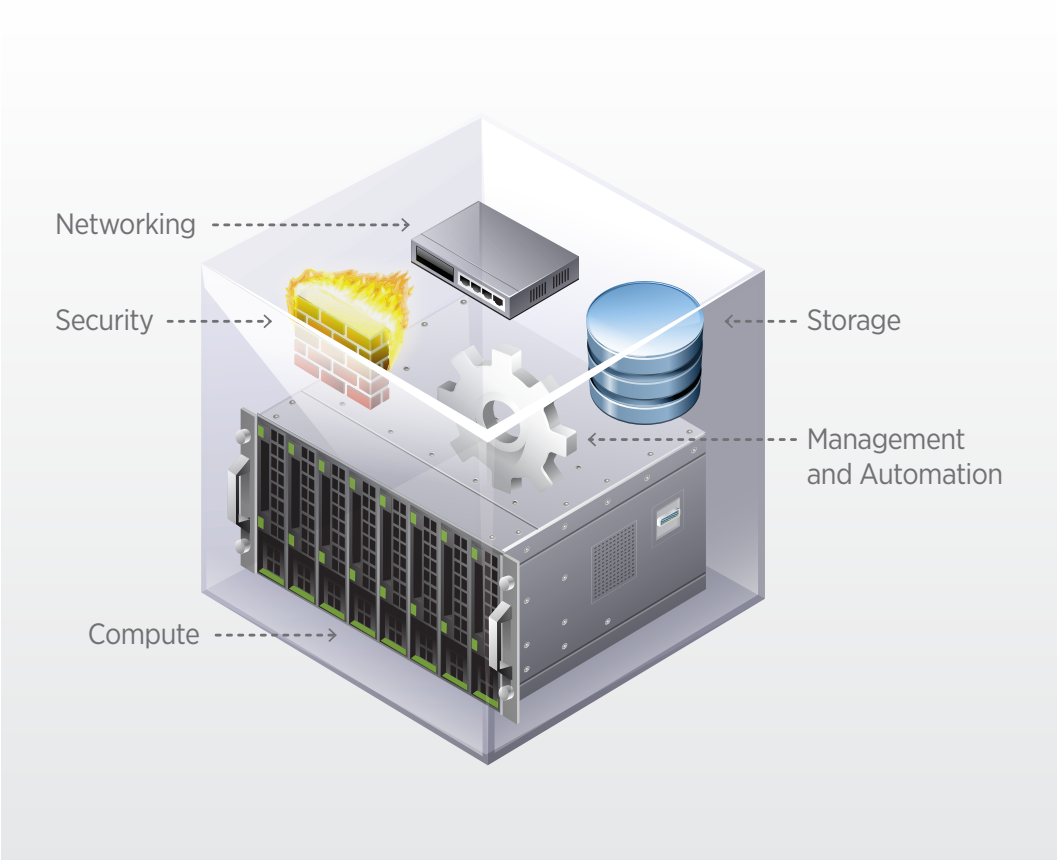


Figure 7. The Software-Defined Data Center

The software-defined data center architecture guides the IT Journey every step of the way. It helps ensure that progressive investments in virtualization build toward a highly efficient and automated environment, while extending the value of existing infrastructure investments. In the ultimate realization of the software-defined data center, all resources are virtualized, so they can be automatically deployed based on clear IT policies. Applications can be operational in minutes, shortening time to value and dramatically reducing the time IT staff spends on application provisioning and deployment. On-demand services, automated provisioning, proactive incident remediation, and policy-based security and compliance are becoming a reality for the growing number of companies that have moved into the world of ITaaS.

Because it relies on the proven technology of virtualization, the risks of adopting the software-defined data center are relatively low, compared to other disruptive technologies. As a result, analysts are making aggressive projections—for example, that "the global software-defined data center market is estimated at $396.1 million in 2013 and expected to grow to $5.41 billion in 2018. This represents an estimated CAGR of 68.7 percent from 2013 to 2018."[3] In short, history is repeating itself: Virtualization is moving from computing to encompass the entire data center.

VMware 2013 Journey to IT as a Service Survey

Each year VMware examines its global customer base to better understand how customers are adopting virtualization and cloud-computing capabilities to transform their operations. For the 2013 survey, conducted in June and July 2013, we collected data from 1,028 VMware customers using a 30-minute Web-based questionnaire. The participants represent a broad range of industries, titles, and company sizes (Figure 8).

COMPANY SIZE (NUMBER OF EMPLOYEES)	
Small-Medium (1-999)	33%
Commercial (1,000-4,999)	33%
Enterprise (5,000+)	33%

GEOGRAPHY	
North America (US, Canada)	599
EMEA (Germany, UK, France)	238
APAC (Australia, China, India, Japan, New Zealand, Singapore	221

Figure 8. VMware 2013 "Journey to IT as a Service" Survey Participants by Company Size and Geographic Distribution

Many of the survey questions are the same as in previous years, which allows us to identify year-over-year trends and long-term achievements in the adoption of virtualization, cloud, and other key data center technologies.

The 2013 findings yield key insights about the maturity of virtualization technology, the penetration of virtualization in the data center, and the business value that businesses are achieving as a result of their investments in virtualization. This report captures and explains the findings that are most relevant to IT decision makers today.

[3] MarketsandMarkets, Software Defined Data Center (SDDC) Market (Software Defined Storage [SDS]; Software Defined Networking [SDN], Software Defined Compute/Server, Network Virtualization Security)—Global Advancements, Market Forecasts And Analysis (2013–2018), August 2013.

Virtualization: Unprecedented Growth, Extraordinary Potential

Pervasive Nature of Virtualization

One major finding of the survey is the pervasive nature of compute virtualization. Independent analysts estimate that 68 percent of all workloads now run on virtual machines (Figure 9). Given that the majority of enterprise workloads—including 40 to 70 percent of business-critical applications—are now virtualized, virtualization has emerged as the standard compute environment for the enterprise data center.



Figure 9. Growth of Virtualization in the Data Center, 2009 to 2013 (*Source: Industry Analyst Research)

The rapid growth and acceptance of virtualization is due to the unprecedented value that IT groups are realizing—for example, ROI as high as 229 percent for the most mature ITaaS companies. That's why enterprises across a broad range of industries expect to reach the 80 percent mark for virtualization.

Current State of Virtualization

Another key finding is that VMware customers have significantly matured year over year, so that 75 percent of IT organizations have progressed beyond server consolidation to more mature phases of the Journey. In addition, 21 percent of customers surveyed position themselves in the ITaaS stage (Figure 10). ITaaS companies rely on virtualization not only to host mission-critical business applications such as database, collaboration, ERP, and CRM but also to deliver IT services in new and more efficient models. In addition to capital and operating cost savings (discussed later), these companies are achieving high availability, automated capacity management, and other business benefits.

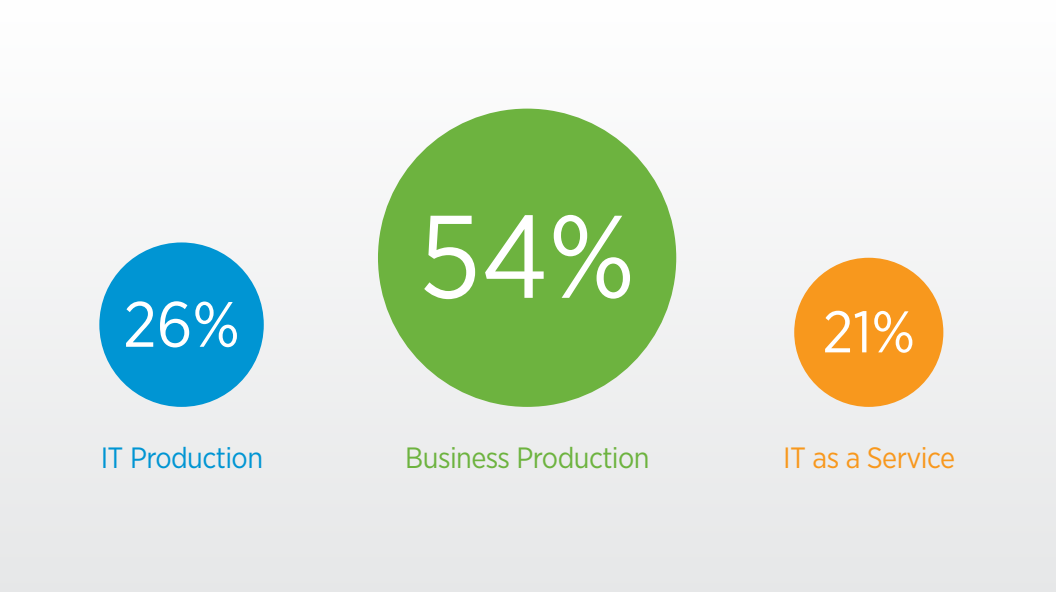


Figure 10. Percentage of Respondents in Each Stage of the IT Journey

Virtualization of Business-Critical Applications

An important milestone in the maturity of the market is the ability of enterprises to deploy business-critical applications on virtual machines. The survey data from 2013 shows that customers have grown confident in the ability of virtualization to support workoads that generate revenue and help ensure business operations. The year-over-year comparison shows what can only be characterized as explosive growth in this confidence metric (Figure 11). Early penetration in key Microsoft applications—SQL Server, SharePoint, and Exchange—have been joined by Oracle and SAP databases and applications.

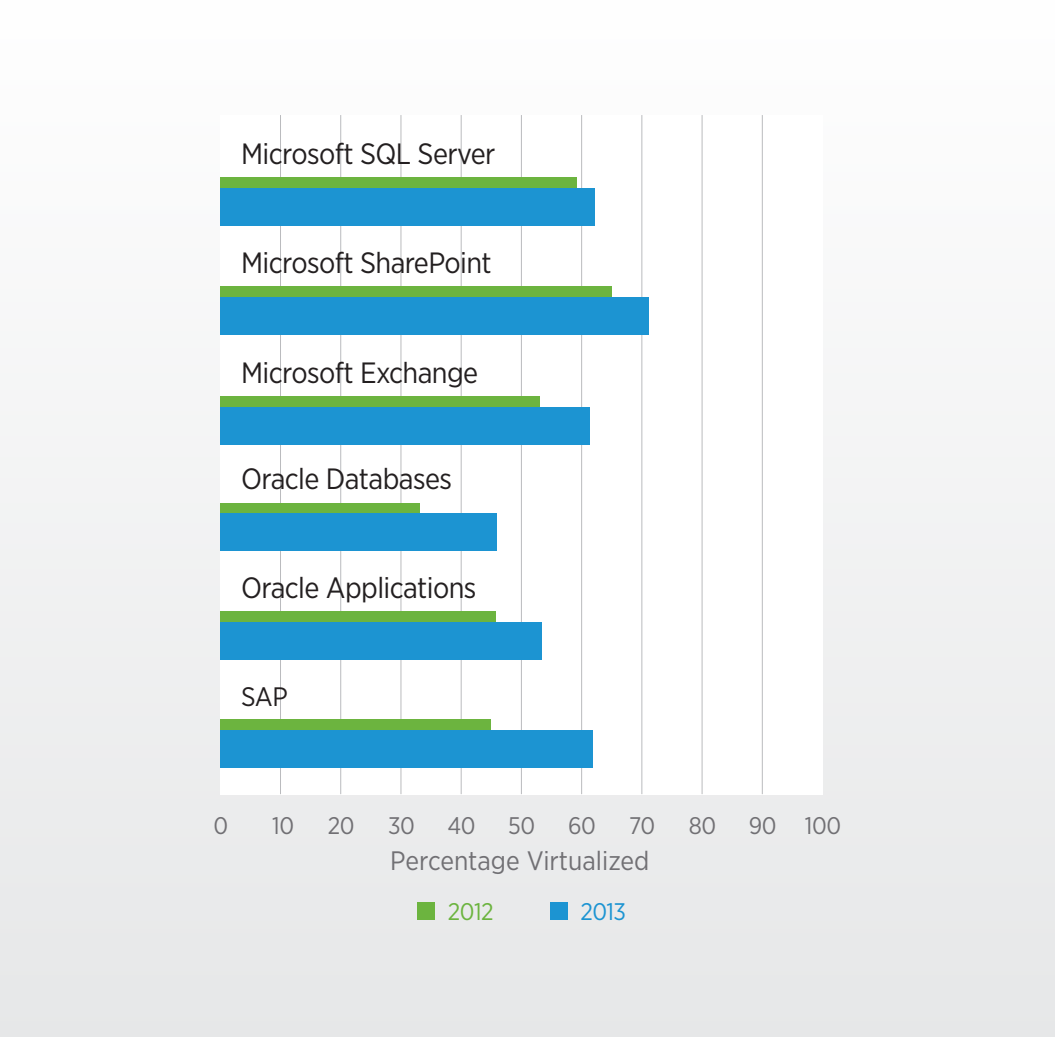


Figure 11. Virtualization Levels of Business-Critical Applications

Budget Savings

Nearly all respondents (96 percent) are realizing budget savings thanks to virtualization. The average company realized total cost savings of 23 percent of its IT budget (Figure 12). A key value proposition of virtualization for all IT organizations, regardless of maturity, is budget savings, both CapEx and OpEx.

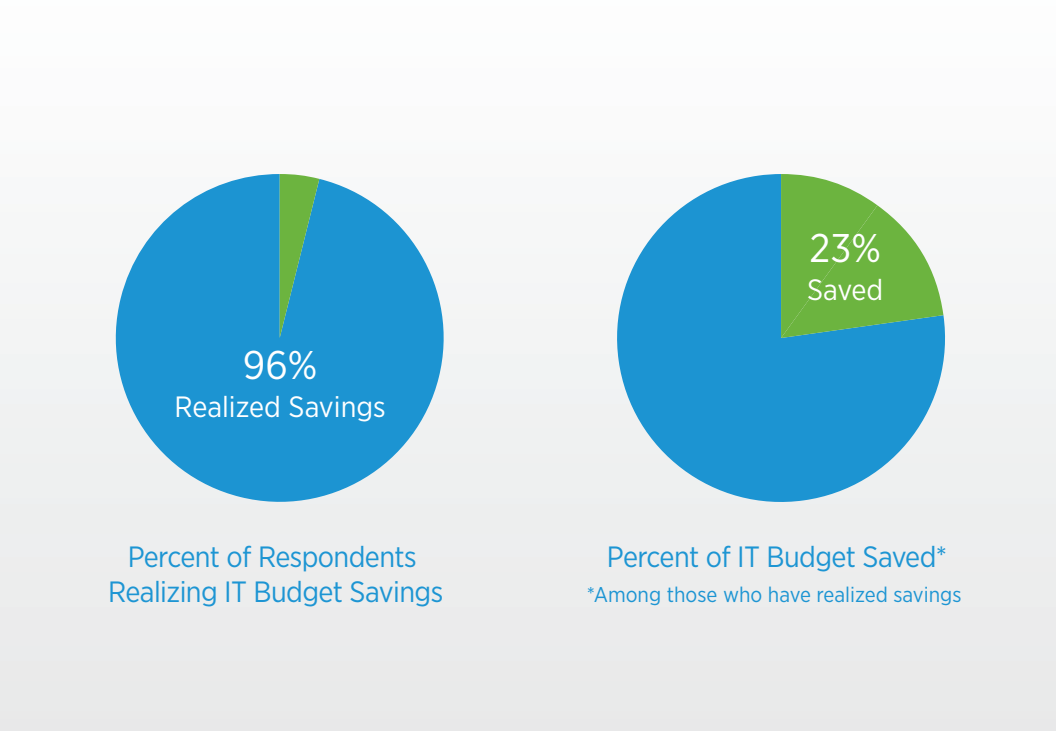


Figure 12. Percent of Organizations Reinvesting Savings by Journey Phase

Savings Reinvestment

Although all organizations leverage virtualization to reduce the corporate IT budget, as organizations mature, CIOs are more effective at reinvesting larger and larger portions of their budget savings in strategic initiatives that create new internal and customer-facing services and build additional capabilities in the IT organization. Of companies that have reached the ITaaS phase, 72 percent reinvest cost savings, a significant increase compared to companies at earlier phases of the Journey (Figure 13).

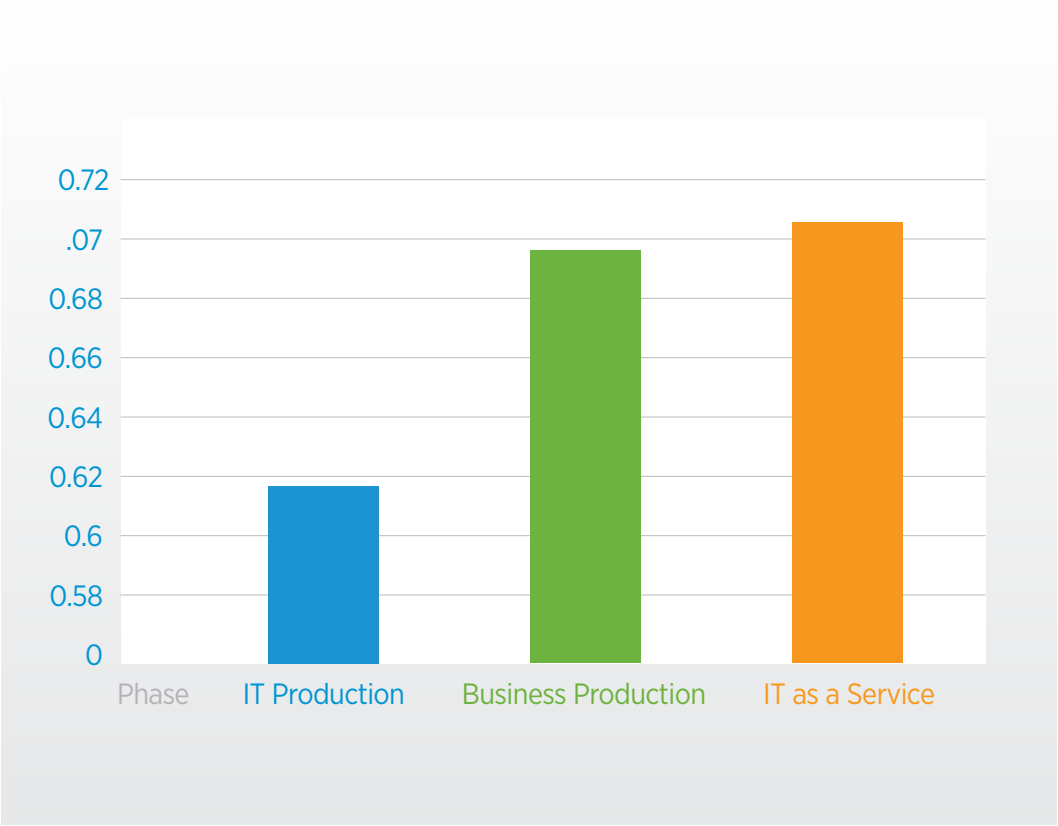


Figure 13. Savings Reinvestment by Journey Phase

Staff Productivity

One of the most dramatic effects of virtualization is the continued increase in IT staff productivity. In particular, the typical system administrator is now managing 193.5 virtual machines, a 155 percent increase in just four years (Figure 14).

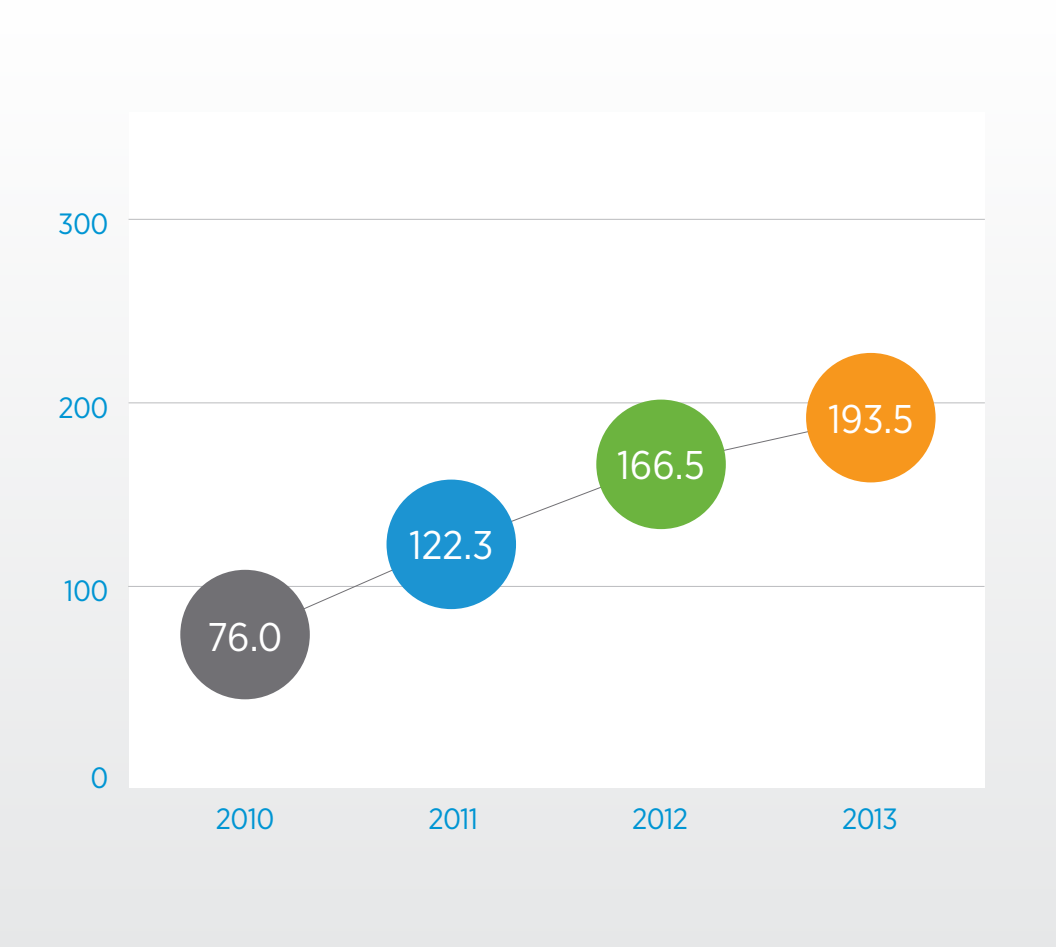


Figure 14. Average Number of Virtual Machines Managed per System Administrator by Year

As expected, the most significant gains are realized by companies in the ITaaS phase of the Journey. As a result of high degrees of automation and innovative models of IT service delivery, ITaaS customers are more than 200 percent more productive than companies in the IT production phase (Figure 15).

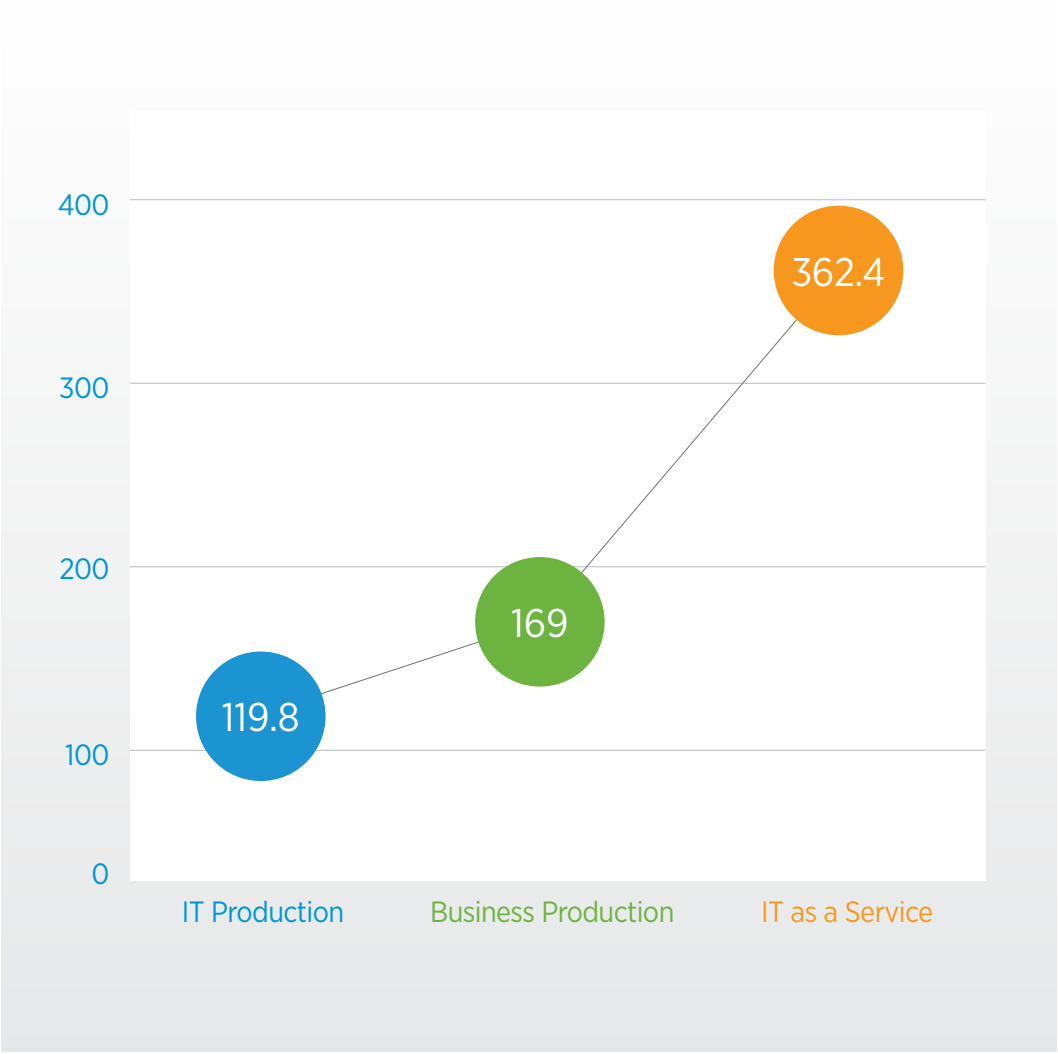


Figure 15. Average Number of Virtual Machines Managed per System Administrator by Journey Phase

IT Benefits

As customers move along the Journey, they also realize tangible benefits in areas such as efficiency, agility, and control. Particular improvements cited include reduced cost per compute instance, increased revenue generation, better compliance with SLAs, and improved IT performance (Figure 16). The values in Figure 16 represent the percentage of customers who realized each benefit and compares that percentage to customers who realized the same benefit a year ago.

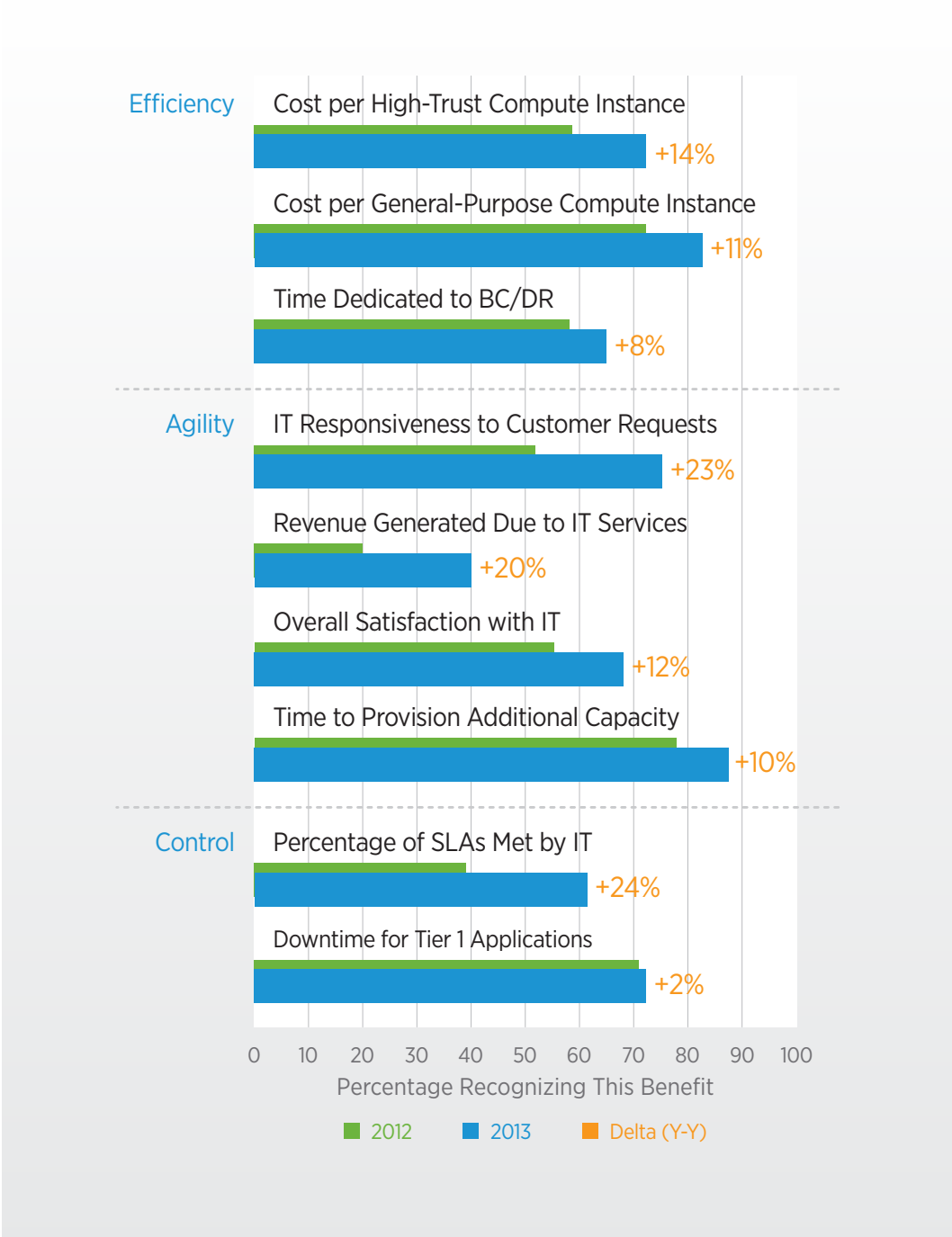


Figure 16. IT Benefits from Virtualization

ITaaS: Achieving the Full Promise of the Software-Defined Data Center

When companies achieve the goal of ITaaS, three trends are evident. First, they realize even greater business value than companies in the early phases of the Journey in the form of capital and operating cost savings, ROI, revenue generation, and other key metrics. Second, companies in this phase of the Journey are increasingly reinvesting the savings in strategic initiatives, including new revenue-generating applications and services. Finally, the IT mindset has firmly shifted from tactical to strategic.

ROI

Enterprises in the ITaaS phase of the Journey receive a significantly greater ROI—in other words, steady investment in virtualization pays off to a greater degree as investment grows. This general trend holds true for all phases of the Journey: Companies in phase II, business production, realize higher ROI than those in phase I, IT production, and companies that have achieved ITaaS realize a substantial positive change in ROI compared to their peers (Figure 17). Also, interestingly, ROI results have improved for each phase year over year.

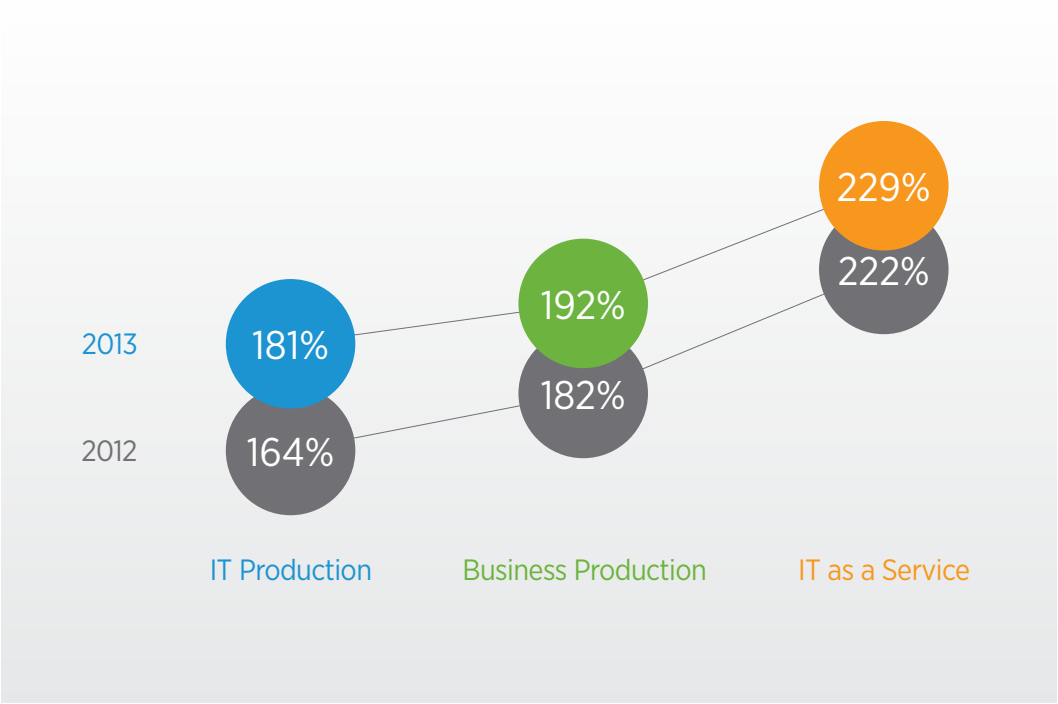


Figure 17. ROI by Journey Phase, 2012 and 2013

IT Budget as a Percentage of Revenues

Corporate budgets are a reflection of priorities: More funding is given to those who can demonstrate their ability to contribute to reaching the company's strategic goals. For companies in the final phase of the Journey—ITaaS—the IT departments have done so decisively. In 2013, 53 percent of ITaaS organizations reported increased revenue generated by new IT applications and services (Figure 18). On average, these organizations were able to generate 26 percent more revenue than before. This strategic contribution to business results has translated into ITaaS organizations securing larger budgets as a percentage of revenue. When comparing investment-minded ITaaS organizations with budget-minded IT production organizations, the survey shows as much as a 60 percent difference in budget allocations as a percentage of revenue.

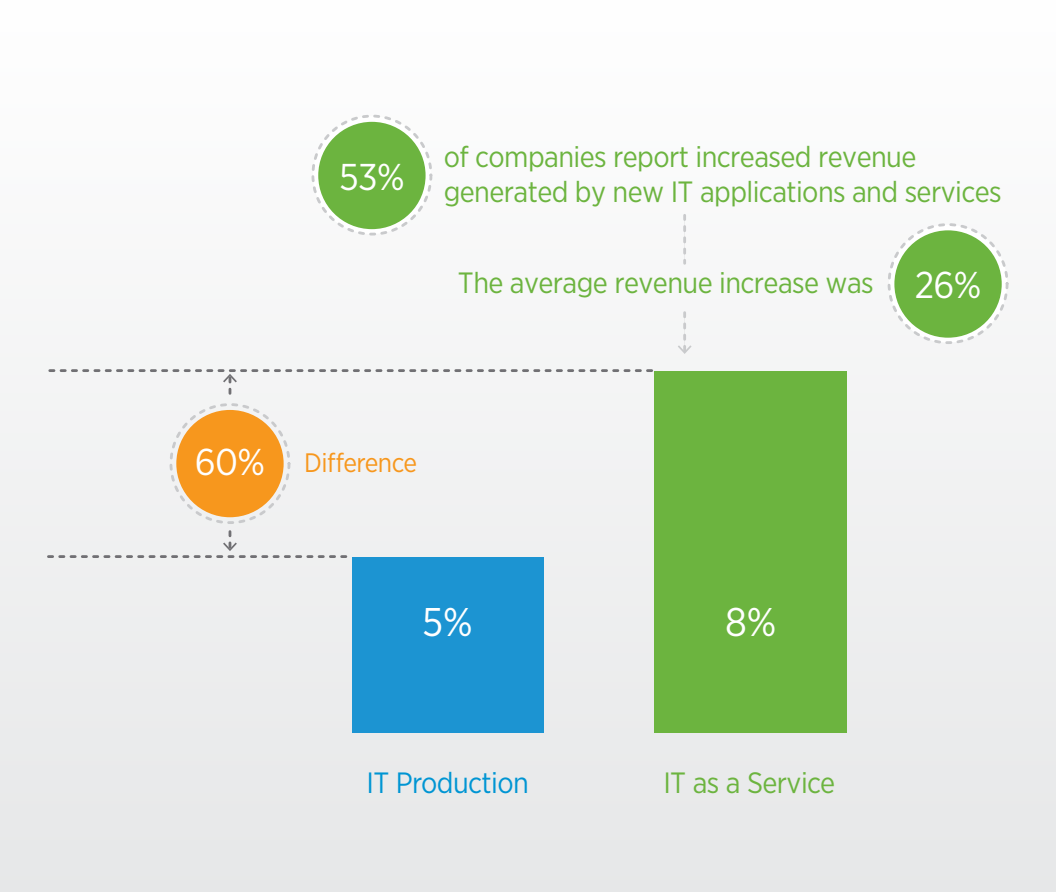


Figure 18. IT Budget Allocations as a Percentage of Revenue

Virtualization Priorities

Although many companies have achieved remarkable success with virtualization, they are far from complacent: More than three-quarters (77 percent) of respondents have a strategic plan for extending compute virtualization to storage and then networking and security. This data is a strong indication of the extent to which customers understand and accept the value of the software-defined data center architecture as the foundation of the IT Journey to ITaaS.

Evolving Role of the Data Center Team

The arrival of key software-defined data center technologies has also affected the way the IT organization views itself and its future orientation. 75 percent of customers predict that today's compartmentalized roles for compute, storage, and network administrators will merge to create a single IT administrator with broad expertise in all data center technologies (Figure 19). Furthermore, these customers expect the server administrator's role to expand to include storage and networking expertise (Figure 20).

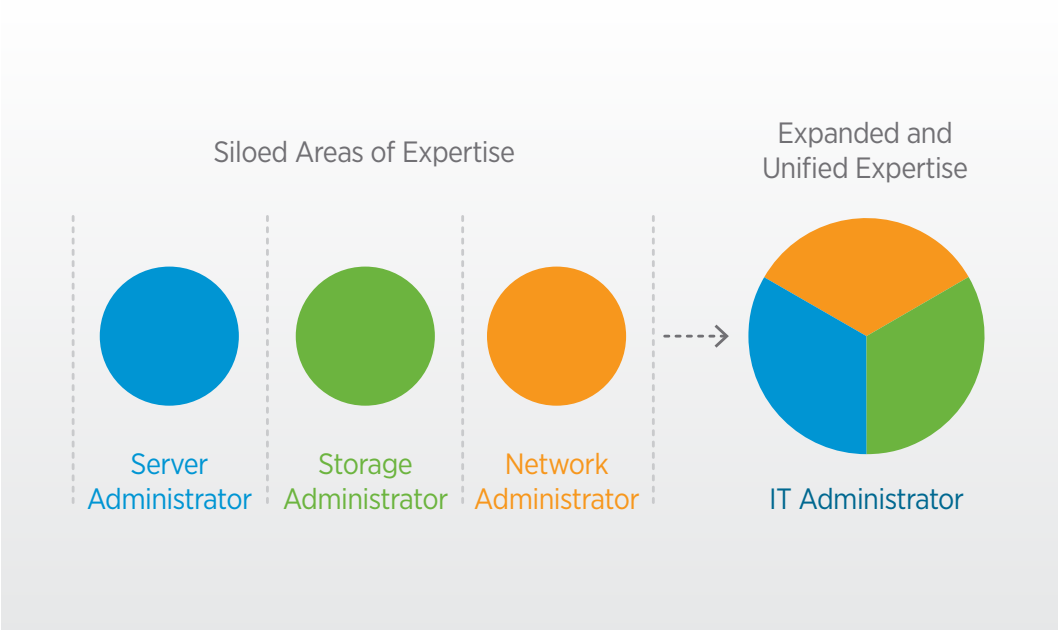


Figure 19. Unification of IT Administrator Functions in ITaaS

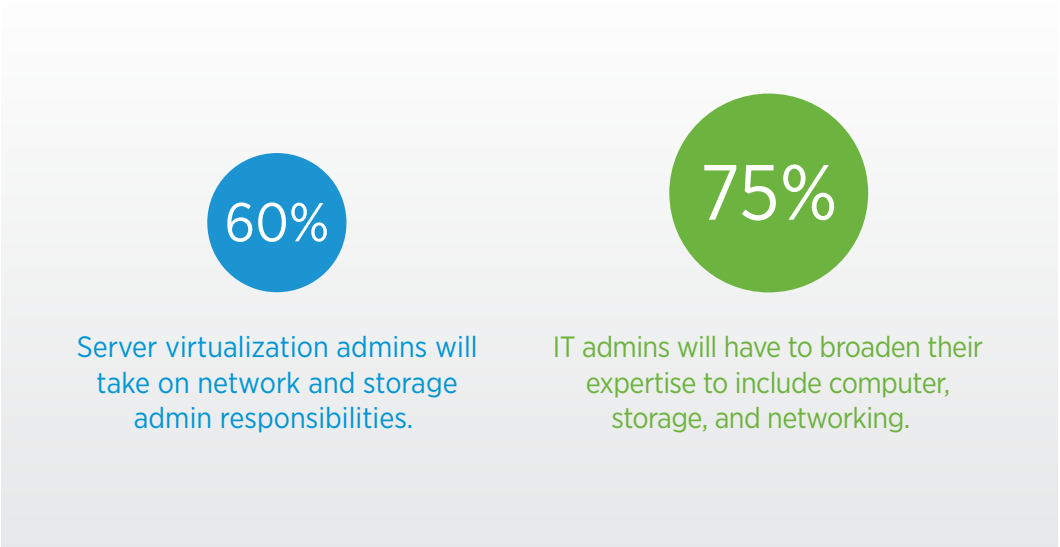


Figure 20. Changing Role of the Systems Administrator

Summary

Virtualization Today

- Virtualization is a pervasive technology in the data center: 68 percent of all workloads run on virtual machines (see "Pervasive Nature of Virtualization").
- VMware customers' virtualized infrastructures continue to mature as customers advance along the Journey: 21 percent now deliver ITaaS (see "Current State of Virtualization").
- More business-critical applications run on virtual platforms—a necessary step on the road to ITaaS (see "Virtualization of Business-Critical Applications").
- Virtualization delivers total cost savings of 23 percent for the average IT budget (see "Budget Savings").
- Although some virtualization savings are returned to the corporate budget, more than two-thirds of customers reinvest those savings in innovation, and the percentage increases as companies move toward ITaaS (see "Savings Reinvestment").
- System administrator productivity has grown dramatically as a result of virtualization. The average system administrator today manages 193.5 virtual machines, a 155 percent increase over 2010 levels (see "Staff Productivity").
- As customers move along the Journey path, they realize tangible business benefits, such as reduced cost per compute instance, increased revenue generation, better compliance with SLAs, and improved IT performance (see "IT Benefits").

Benefits of Delivering ITaaS

- The most advanced companies are realizing higher ROI compared to peers in earlier stages of the Journey (see "ROI").
- The phenomenal success of virtualization translates into additional funding, and the farther along the IT Journey, the more the budget increases (see "IT Budget as a Percentage of Revenues").
- Enterprises are planning to invest heavily in virtualizing their storage and networking, in that order. They continue to reduce their mainframe footprints in favor of x86 virtual machines (see "Virtualization Priorities").
- The role of the systems administrator changes as enterprises move to ITaaS. In particular, survey respondents predict that the now-separate roles of server, storage, and network administrator will merge into a unified data center administrator responsible for all aspects of data-center operations (see "The Evolving Role of the Data Center Administrator").

To learn more about how VMware can help you on your Journey to ITaaS, visit vmware.com.

Enterprises in the ITaaS phase of the Journey receive a significantly greater ROI—in other words, steady investment in virtualization pays off to a greater degree as investment grows.



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